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To cite this article: Bart Schweitzer, Nettie Blankenstein, Willemjan Slort, Dirk L. Knol, Luc Deliens & Henriette Van Der Horst (2016): Writing information transfers for out-of-hours palliative care: a controlled trial among GPs, *Scandinavian Journal of Primary Health Care*, DOI: 10.3109/02813432.2016.1163036

To link to this article: <http://dx.doi.org/10.3109/02813432.2016.1163036>



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Published online: 19 Apr 2016.



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RESEARCH ARTICLE



Writing information transfers for out-of-hours palliative care: a controlled trial among GPs

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ABSTRACT

Objective: The aim was to evaluate the effect of the implementation of an information handover form regarding patients receiving palliative care. Outcome was the information available for the out-of-hours GP co-operative. **Design:** We conducted a controlled trial. **Setting:** All GPs in Amsterdam, The Netherlands. **Intervention:** The experimental group ($N=240$) received an information handover form and an invitation for a one-hour training, the control group ($N=186$) did not receive a handover form or training. We studied contacts with the GP co-operative concerning patients in palliative care for the presence and quality of information transferred by the patient's own GP. **Main outcome measures:** Proportion of contacts in which information was available and proportion of adequate information transfer. Results. Overall information was transferred by the GPs in 179 of the 772 first palliative contacts (23.2%). The number of contacts in the experimental group in which information was available increased significantly after intervention from 21% to 30%, compared to a decrease from 23% to 19% in the control group. The training had no additional effect. The content of the transferred information was adequate in 61.5%. There was no significant difference in the quality of the content between the groups. **Conclusion:** The introduction of a handover form resulted in a moderate increase of information transfers to the GP co-operative. However, the total percentage of contacts in which this information was present remained rather low. GP co-operatives should develop additional policies to improve information transfer.

KEY POINTS

- The out-of-hours period is potentially problematic for the delivery of optimal palliative care, often due to inadequate information transfer.
- Introduction of a handover form resulted in a moderate increase of transferred information.
- The percentage of palliative contacts remained low in cases where information was available.
- Adequate information was transferred in more than half of the cases.

ARTICLE HISTORY

Received 31 March 2015
Accepted 23 February 2016

KEYWORDS

Education; general practice; GP co-operative; out-of-hours care; palliative care; primary care; The Netherlands

Introduction

The goal of palliative care is to provide the highest possible quality in the last phase of life for patients and their family. As most patients would prefer to die at home among their family and friends, well organised primary palliative care to ensure this quality is essential.[1–4]

During the past decades important changes have taken place in the primary health care system for out-of-hours service provision that now threaten the continuity of care. GPs in the United Kingdom, Ireland, Sweden, and Denmark have reorganised their out-of-hours care from rota groups to larger scale GP co-operatives.[5–8] The same shift has taken place in the Netherlands where GP co-operatives now serve 90% of

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the population. Patients are likely to receive out-of-hours care from a doctor they have never seen before, and night shifts are frequently the responsibility of young GPs who work only as locums in the co-operatives.

The out-of-hours period is therefore a potentially problematic time for the delivery of high-quality palliative care. Transfer of information between GPs and their out-of-hours co-operatives is essential to ensure continuity of care. Unfamiliarity with the patients and their problems will have an impact on service provision and may lead to poor symptom control and inappropriate hospital admissions.[9–14] This may contribute to the patients' preferred place to die being disregarded.[15]

A main obstacle to the delivery of high-quality palliative care in the out-of-hours period as expressed by GPs in the United Kingdom is inadequate information on patients they are called to see.[10,16] This was confirmed by Dutch GPs in a focus-group study.[17] Some doctors even suggested that passing on notes on palliative patients by their GPs should be compulsory.[18] Information exchange impacted strongly on their experiences of palliative care encounters within the out-of-hours system. They felt that they were often the ones to pick up the pieces when it came to palliative care problems if in-hours GPs failed to transfer information.[16] Some barriers to writing information transfers are on the operational level: lack of time, technical problems, and unclear procedures. Another reason for not transferring information was that the GP had not expected deterioration of the patient's condition.[18]

In the Netherlands now, almost 60% of dying patients with non-acute illnesses die at home.[19–21] Within primary care, the GP is the key professional, and almost 100% of the inhabitants have their own GP.[22] The aging population and the growing number of non-acute deaths are expected to intensify the GPs' involvement in palliative care.[23] This also means an increasing workload for out-of-hours palliative care.

We aimed to investigate if the introduction of and training in using structured handover forms could improve transfer of information between GPs and the out-of-hours service concerning palliative care.

Research questions

Does the introduction of structured handover forms improve: (a) the frequency and (b) the adequacy of information provided for out-of-hours palliative care, compared with usual care?

In this study, patients receiving palliative care included cancer and non-cancer patients. Palliative

care was defined according to the European Association for Palliative Care: palliative care is the active, total care of a patient whose illness is not responsive to curative treatment. Control of pain, other symptoms, and social, psychological, and spiritual problems is paramount.[24]

Methods

Study design

We conducted a controlled trial. The GP co-operation in Amsterdam provides out-of-hours services from two clinics at night and six clinics during the evenings and weekends for a population of 800,000 inhabitants. An appointment for urgent health problems for a consult or visit is made by telephone. In Amsterdam ~150,000 contacts a year are handled by the GP posts.

Two groups of GPs were formed according to the boundaries of the GP clinics in which they co-operate: (1) all GPs working in the western half of Amsterdam ($N=240$) and (2) all GPs working in the eastern half of the city ($N=186$). By flipping a coin we randomly assigned group 1 to the experimental condition and group 2 to the control condition. We studied all out-of-hours contacts with the GP co-operative of Amsterdam concerning patients in palliative care from 1 December 2005 to 30 September 2007. In the case of patients who had had several contacts with the GP co-operative, only the first contact was included.

Study population

The study population included all GPs working in Amsterdam.

Sample size and power calculation

We planned to include 500 contacts in order to detect an absolute increase of information transfers of 10% after intervention with an α of 5% and a power of 90%.

Procedure

The baseline period for the experimental and the control group started on 1 December 2005 and continued until 28 February 2007, when a sufficient number of baseline contacts was achieved. The intervention was performed from January 2006 to 28 February 2007 (Figure 1). On several dates during this period we organised training sessions for GPs in the experimental group to introduce the handover form. The GPs did

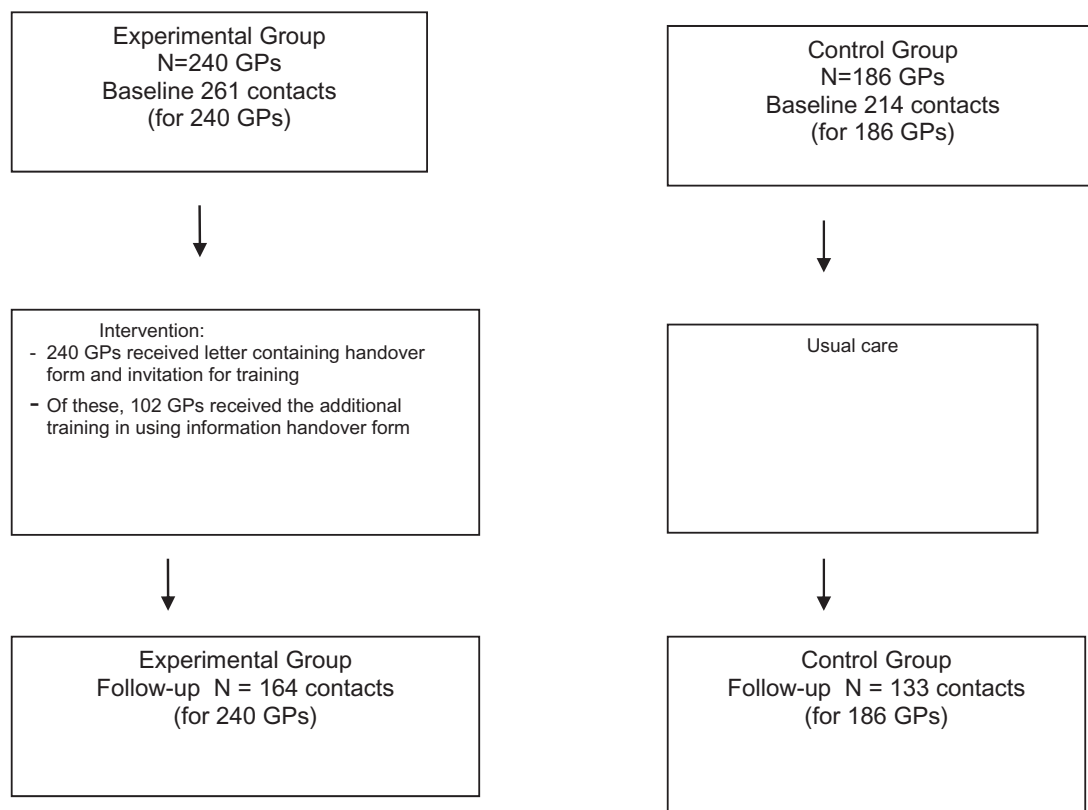


Figure 1. Overview of palliative contacts (Total $N = 772$).

not use the handover forms before they were trained. Contacts with patients from GPs who had attended the training sessions were registered as follow-up contacts after the date of the training. The intervention was concluded on 28 February 2007 through a final letter to all GPs in the experimental group – those who had attended the training as well as those who had not – containing the handover form and the procedure to be followed. From that moment on, all patient contacts were registered as follow-up contacts. Data were collected until 30 September 2007.

Intervention

Our intervention was based on a prior needs assessment by GP focus group meetings.[17] We drafted a handover form that, when filled in, contains all essential information about a patient in palliative care. The own GP of a patient decided whether a patient was receiving palliative care and a handover form should be sent. The handover form has to be sent by fax to the GP co-operative, where a secretary enters the data into the database system on the same day, creating a new record for this patient if no previous information is available. These data are made available for a locum when a patient receiving palliative care contacts the GP co-operative. An educational intervention was

designed to practice working with this tool (Box 1). All GPs in the experimental group received a letter to inform them about the project and to invite them for a single one-hour training session.

Control group

The control group did not receive any structured handover form or training.

Measurement procedures

To identify palliative care contacts, we carried out an electronic search in the out-of-office data management system of the GP co-operative in Amsterdam "Callmanager". This database contains medical data on all calls with the GP co-operative. It also contains all information transferred by GPs about their patients. The records of all phone calls during the study period were searched electronically. We identified palliative care contacts by means of a search with the text words "palliative", "terminal", "cancer", "carcinoma", "inoperable", "opioid", and "fentanyl". This search yielded palliative care contacts regarding cancer and non-cancer patients but also other contacts, for example, when a patient used an opioid for acute low back pain. A GP with extensive experience in palliative care (BS)

Box 1. Process and content of the intervention.

Process of intervention:

- Written invitation to participate in training.
- Groups of 6–10 GPs.
- Training by GP experts in palliative care (90 min).

Content of intervention:

- Importance of proactive planning and anticipatory care.
- Structured case discussion: role of GPs in continuity of care at the end of life.
- Discussion of the barriers on information exchange between in-hours GPs and out-of-hours GPs.
- Introduction of a structured handover form with medical information and information about patients understanding and wishes, medications, and decisions regarding treatment of patients.
- Exercise: writing an information transfer using a case study.

A newsletter on the project was sent to all GPs in the intervention group three times as a reminder of the project in order to boost the writing of information transfers. The intervention ended with a final letter containing the information on the handover form to all GPs in the intervention group.

subsequently examined the identified records and identified palliative contacts according to the definition on palliative care stated above. The context of the complete Callmanager record found in this way with the anamnesis, the description of the symptoms, and the actions undertaken by the locum made this possible. All non-palliative contacts were excluded. A sample of the identified records was examined by a second experienced GP (NB) but no differences in judgment were found. The sensitivity of the search was checked by comparing the electronic search results with hand-searched data (BS) in Callmanager from all contacts during a period of a month. As this did not produce any new contacts regarding palliative care patients, we decided not to carry out a hand search for the entire study.

Outcome measure

The outcome measure for the first research question was the proportion of contacts in which information was present at the GP co-operative.

For the second research question, the outcome measure was the adequacy of this information. We therefore noted the presence or absence of the following items: diagnosis, prognosis, medication, current problems, management plan, patient's knowledge of prognosis, patient's wishes, carers and professionals involved, previous contacts, and availability of own GP. We also noted the time interval between the entrance of the transferred information in Callmanager and the first out-of-hours contact. We defined an information transfer as adequate if:

1. Transferred information was present at the GP cooperative and
2. The information was not older than a month and

3. The information contained the following three elements:
4. diagnosis
5. medication
6. current problems.

We based our definition of adequacy on a previous study [25] that showed that locums consider the quality of the transferred information as sufficient if it contains the three elements specified above, and is up-to-date.

GP and patient characteristics and type of contact

We registered the GPs' gender, age, and type of practice. These data were found in the public accessible registration of GPs.

The patient's gender, age group, and place of residence were registered for all contacts. The reason for the encounter, the diagnosis, and whether a patient was terminally ill or not were registered if the locum had noted this in their records. The type of contact: telephone consultation, home visit, or consultation in the GP clinic was extracted from the record.

Data analysis

Descriptive frequency distributions were carried out for GP, patient, and content characteristics. Patient characteristics and type of contact in intervention versus control condition were compared using Chi-square tests.

Research question (a): we defined the effect of the intervention as the difference in the presence of information transferred between the experimental group versus control group at baseline and follow-up, i.e., the time (pre/post) by intervention effect.

To analyse the effect of the intervention on the transfer of information, we performed a logistic regression. In this analysis we had to deal with the exceptional situation that contacts from different patients from a GP in baseline versus follow-up groups were studied. We therefore used the method of Generalised Estimating Equations (GEE) that allows the inclusion of all contacts in the analysis and allows for dependency of patients from the same GP in baseline and follow-up. We used the same method to analyse determinants for information transfer. The outcome variable was the dichotomous variable presence versus absence of information transfer. As we studied contacts from different patients in baseline and follow-up groups, covariates could vary at baseline and follow-up. We therefore analysed possible differences for the variables gender and age group of the GP, type of practice,

residence (home, residential care home), terminal status, cancer, and the continuous variable age class for the four groups separately (experimental baseline and follow-up group; control baseline and follow-up group). We did not adjust for clustering because we do not know which GPs cooperate with each other.

In the GEE analysis we adjusted for significant differences in GP and patient characteristics.

Research question (b): the effect of the intervention on the dichotomous variable “adequate information transfer available” was analysed using the same method.

Results

We retrieved 3665 records during the trial period of 22 months, of which 1993 non-palliative records were excluded. From the 1672 identified palliative care contacts, we excluded the contacts where the GP belonged to another region, or was unknown and all contacts after the first contact. We included a total of 772 first palliative contacts including 261 contacts at baseline and 164 contacts in the follow-up period in the experimental group and 214 contacts at baseline and 133 contacts in the follow-up period in the control group (Figure 1). Data from these contacts were included in the analyses.

The experimental group consisted of 240 GPs; 102 attended the training and all 240 received the final letter with the handover form. The control group consisted of 186 GPs.

GP characteristics

Table 1 shows no between-group differences in GP characteristics. We found contacts with patients from 320 GPs, 181 out of 240 from the experimental group and 139 out of 186 from the control group. The mean number of included contacts for a GP was 2.4.

Patient characteristics

Table 2 shows characteristics of patients and the type of consultation. There are no between-group differences in patient characteristics. The mean age was 71.9 years and 84.5% of patients resided at home.

Pain, respiratory problems, and digestive problems were the most frequently reported reasons for encounter. Cancer was the most frequent underlying disease (76.4%), and according to the locums 57.5% were terminally ill.

Table 1. GP characteristics.

GP characteristics	Total N = 320	A Exp. baseline group N = 100	B Control baseline group N = 81	C Exp. follow-up group N = 78	D Control follow-up group N = 61	A versus C p value	Control group baseline versus follow-up p value	Baseline Exp. versus control p value	Post measurement Exp. versus control p value
Gender									
Male	67%	78%	55%	71%	59%	0.309	0.674	0.002	0.146
Missing	13	4.0%							
Age group (years)									
<30	1.8%	1.2%	0	4.3%	2.0%				
30–40	10.8%	9.4%	12.3%	10.0%	12.2%				
40–50	29.2%	30.6%	39.7%	21.4%	22.4%	0.581	0.242	0.752	0.966
50–60	39.3%	38.8%	32.9%	42.8%	44.8%				
>60	18.8%	20.0%	15.0%	21.4%	18.4%				
Missing	52	16.2%							
Type of practice									
Single-handed	103 (33.5%)	35.3%	23.7%	40.8%	33.9%	0.064	0.394	0.000	0.380
Duo	119 (38.8%)	51.5%	31.6%	35.5%	30.4%				
Group	85 (27.7%)	13.1%	44.7%	23.7%	35.7%				
Missing	13	4.0%							

Table 2. Patient characteristics and type of contact.

Patient characteristics	Total N = 772	Exp. baseline group N = 261	Control base- line group N = 214	Exp. follow-up group N = 164	Control follow- up group N = 133	Exp. group baseline versus follow-up p value	Control group baseline versus follow-up p value	Baseline exp. versus control p value	Follow-up exp. versus control p value
Gender									
Male	51	54	52	50	47	0.427	0.441	0.645	0.727
Age (years)									
Mean age (SD)	71.9 (14.1)	72.4 (12.8)	75.2 (9.4)	70.7 (16.6)	68.2 (12.0)	0.899	0.002	0.616	0.242
Residence						0.885	0.002	0.011	0.289
Home	84.5	86.5	77.0	86.0	90.1				
Care home	15.5	13.5	23.0	14.0	9.9				
Reason for encounter						0.872	0.109	0.357	0.722
Pain	36.9	38.7	35.0	35.4	38.3				
Respiratory problems	19.4	16.2	19.2	23.2	21.9				
Urinary problems	2.1	1.9	1.9	1.2	3.0				
Digestive problems	12.2	13.5	10.7	12.8	11.3				
Fatigue	0.1	0.4	0	0	0				
Circulatory problems	2.0	1.9	1.4	1.2	3.0				
Psychological problems	7.0	6.9	7.5	7.9	5.3				
Other problems	19.3	18.1	23.4	15.9	15.0				
Terminal status						0.106	0.499	0.190	0.339
Terminally ill	57.5	53.6	61.2	60.4	55.6				
Not terminally ill	41.0	45.2	38.8	37.2	41.4				
Missing	1.4								
Underlying disease						0.093	0.044	0.458	0.040
Cancer	76.4	76.2	72.0	76.8	83.5				
Heart failure	3.4	3.1	2.8	6.1	1.5				
COPD	2.8	2.7	5.1	0	3.0				
Neurological	1.4	1.9	1.4	1.2	0.7				
Unknown	16.1	13.0	18.2	11.0	7.5				
Type of contact						0.528	0.071	0.983	0.239
Telephone consultation	37.0	38.3	38.8	37.8	26.1				
Home visit	62.4	59.8	59.8	59.1	69.9				
Consultation in the centre	1.4	1.9	1.8	0.6	0.7				

Note: Values are expressed as percents, unless specified.

Table 3. Effects of introducing a handover form on the presence of transferred information.

	Odds ratio (95% CI)	p Value
Exp/Contr baseline/follow-up	0.27 (0.11–0.64)	0.003
Gender GP (male)	0.94 (0.59–1.51)	0.811
Age class GP (years)		
<30	1.50 (0.55–4.09)	0.433
30–40	3.44 (1.63–7.25)	0.001
40–50	1.32 (0.70–2.50)	0.390
50–60	1.72 (0.94–3.13)	0.076
>60	0.98 (0.56–1.71)	0.944
Single-handed Practice		
Duo	1.25 (0.76–2.06)	0.368
Group	1	
Gender Patient (male)		
Age class (years)	1.11 (0.74–1.67)	0.616
<60	1.02 (0.44–2.36)	0.960
60–70	0.94 (0.41–2.17)	0.884
70–80	2.38 (1.06–5.35)	0.036
80–90	1.10 (0.52–2.33)	0.802
>90	1	
Residence (at home)	1.27 (0.51–3.16)	0.600
Terminal status (yes)	1.14 (0.67–1.94)	0.631
Cancer (yes)	1.36 (0.78–2.38)	0.278

Generalised Estimating Equations. Number of contacts: 772.

Information transfer

Information transferred by the patient's GP was available for the locum in 179 of the 772 first palliative contacts (23.2%).

In the experimental group at baseline, information on the patient was available in 21% of the cases and at follow-up in 30% of the cases. In the control group at baseline, information on the patient was available in 23% and in 19% at follow-up.

Table 3 shows that the proportion of contacts in which an information handover form was present increased more in the intervention group compared with the control group (95% confidence intervals (CI): 0.11–0.64, $p = 0.003$).

In this analysis we controlled for pre-post differences in gender and age group of the GP, type of practice, gender, age and residence of the patient, terminal status, and cancer.

Adequacy of the information transferred

For the 179 contacts in which information was transferred, this information was adequate in 110 contacts (61.5%), not adequate in 57 contacts (31.8%), and missing data in 12 contacts (6.7%). When the information was not adequate, this was in 31 contacts (17.3%) because the information was older than one month and in 26 contacts (14.5%) because the content was insufficient.

In Table 4 we present the odds of the presence of adequate information. The experimental group and the control group did not differ significantly regarding the presence of adequate information (95% CI: 0.18–10.21,

Table 4. Effects of introducing a handover form on quality of transferred information.

	Odds ratio (95% CI)	p Value
Exp/Contr baseline/follow-up	1.34 (0.18–10.21)	0.777
Gender GP (male)	1.22 (0.47–3.18)	0.681
Age class GP		
<30	1.04 (0.08–3.60)	0.972
30–40	0.26 (0.07–1.05)	0.060
40–50	0.66 (0.20–2.22)	0.506
50–60	0.68 (0.22–2.11)	0.512
>60	1	
Single-handed Practice	1.05 (0.27–4.07)	0.940
Duo	3.17 (0.97–10.40)	0.056
Group	1	
Gender of patient (male)		
Age class (in years)	0.96 (0.33–2.83)	0.953
<60	7.49 (0.33–172.27)	0.208
60–70	12.88 (0.56–293.63)	0.109
70–80	7.66 (0.32–183.03)	0.209
80–90	4.90 (0.26–93.20)	0.290
>90	1	
Residence (at home)	0.10 (0.01–1.72)	0.113
Terminal status (yes)	0.29 (0.08–1.07)	0.063
Cancer (yes)	0.58 (0.17–1.9)	0.381

Generalised Estimating Equations. Number of contacts with information transferred = 167.

$p = 0.777$). In this analysis we controlled also for pre-post differences in gender and age group of the GP, type of practice, gender, age and residence of the patient, terminal status, and cancer.

Adherence to intervention

We performed a subgroup analysis for the experimental group to look for differences between GPs who attended the training (102) and GPs who only received the final letter with the handover form (data not shown).

Post-intervention, we found 164 contacts from patients whose GPs belonged to the experimental group. Although there were more contacts with information available provided by GPs who attended the training ($N = 89$, information available: 32), the difference with the subgroup of GPs who only received the final letter ($N = 75$, information available: 19) was not significant. Regarding the second research question, in the subgroup of GPs who attended the training, information was adequate in 19 out of 32 contacts with handover form, versus 13 out of 19 in the subgroup of GPs who only received the final letter (n.s.).

Discussion

The main finding from this controlled trial is that the introduction of an information handover form on their palliative patients to the out-of-hours GP co-operative had a positive, statistically significant, influence on the proportion of contacts in which information on the palliative patient was available in the co-operative. However, despite the absolute increase of 9%, the

percentage of contacts in which information was available remained low (30%) in the experimental group. The majority of GPs did not attend the training and received only the introduction letter and the handover form. There is no proof that the one-hour training session contributes to the effect. No significant further benefit from our intervention was identified in terms of the adequacy of the information available.

Comparison with existing literature

Previous studies showed that, similar to our results, GPs do not routinely write information transfers, [10,26] whereas in the U.K. Burt et al. found that a transfer of information was available in 1.2–13%; Munday et al. found that transferred information was present in 21% of the patients who contacted the out-of-hours co-operative. In the Netherlands, De Bock et al. found that a transfer of information was available in 20%. [1,26,27] In comparison with these studies, our improvement towards 30% can be qualified as a positive result.

To our knowledge there are no studies on initiatives to improve the writing of information transfers, although an electronic Palliative Care Summary (ePCS) is currently being implemented throughout Scotland to provide out-of-hours staff with up-to-date summaries coming from GP records. This is considered by both patients and professionals as a potentially useful and feasible innovation. [28] Working with handover forms sent from in-hours practices to out-of-hours providers is recommended in the literature to address the problem of an isolated working doctor in the night. [4,11,13,16]

Many GPs complete special notes only when they think an out-of-hours call is likely, rather than “not unexpected”. This is often at the very end of life [10] but anticipatory care has to start amply before the terminal phase. Our intervention made an appeal to GPs to overcome the barriers in writing an information transfer to the out-of-hours co-operative by convincing GPs of the importance of good anticipatory care and by giving them a standardised handover form. This minimised time constraints by offering a pre-printed form with all necessary headings.

The effect of the intervention, however, remained moderate. Our intervention focused mainly on the improvement of transferring information. This is perhaps not enough to bring about a change in behaviour of the GPs.

There are many reasons why GPs do not transfer information about their patients receiving palliative care. One could be that GPs are available themselves

for their terminally ill patients during out-of-hours periods. Burt et al. stated that GPs are often reluctant to define patients as “palliative”, in spite of their terminal condition, and therefore are unlikely to recognise the need for information handover. [26] Another reason for under-estimating the importance of transferring information could be that the GPs did not expect a rapid deterioration. [25] Apart from the barriers caused by time constraints (writing an information transfer is time-consuming) and technical problems (no standardised form available, no internet connection) there are problems inherent to the relation between the doctor and the patient receiving palliative care. First of all, a major problem is the timely recognition of the palliative phase by the GP. [29] One of the perceived barriers in the communication between GP and patient is the unpredictability of the clinical course and the uncertainty of an exact prognosis in palliative care. This means that it is difficult for a doctor to address items concerning prognosis and end-of-life decisions with his patient in time. Another factor may be that GPs have only a few patients receiving palliative care and that they are not focused on the need of anticipation.

Where GPs in Scotland found that special notes to inform the out-of-hours service about patients were not specific enough for patients receiving palliative care [10], we found that the quality of the information noted and sent was adequate in 61.5%. Perhaps the main obstacle in writing information transfers has been overcome when a GP starts writing them.

Strengths and limitations of the study

A strength of the study is that we included all contacts with the GP co-operative with patients receiving palliative care from a full population of GPs in Amsterdam. We studied the availability of information about all patients for whom a call was made.

One factor that might have contributed to our positive result may be that the intervention was based on our prior needs assessment by means of focus-group discussions. It made clear that GPs felt that there was a need for better communication. They were therefore susceptible for a change in behaviour.

A limitation is that we do not know how many times information was transferred for patients for whom no call was made, nor did we register whether regular updates were sent.

Due to the small number of contacts per GP, it was not possible to examine to what degree the same GPs write information transfers.

It is possible that changing GP's habits take longer than our study period, which may have contributed to

the relatively small effect we found. One could also argue that the effect of this intervention possibly fades out in time when GPs are not frequently reminded.

Although studying the complete text of the contacts with the GP co-operative made it possible to identify palliative care contacts, it is possible that not all palliative care contacts were recognised as such.

Recommendations

Further improvement could be made by a change of attitude of GPs, which could be brought about by giving them feedback on their information transfer. When one of their patients receiving palliative care has had contact with the GP co-operative, they could be contacted the next morning by an assistant of the GP co-operative to inform them whether adequate information on this patient had been available to the locum. A future study should therefore also include the effect of direct feedback to GPs that did not send information.

Better logistics through the use of an electronic information system would be helpful. It is then possible to flag patients in the system of the GP co-operative, to retrieve information on patients written in daytime and to ask the GP electronically for a regular update on an automatically generated review date. These suggestions could be included in quality standards for GP co-operatives.

Conclusion

The introduction of a handover form resulted in a moderate increase of information transfers to the GP co-operative. Training in using this form did not contribute to the effect. The total percentage of contacts in which this information was present remained rather low. GP co-operatives should develop additional policies to improve information transfer. When information was provided its content was mainly adequate.

Ethical approval

The Ethics Board of the VU University Medical Center, Amsterdam, was informed about the study, and they decided that the study did not require a formal ethical review.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

Funding information

This study received financial support from the AGIS Health Insurance Company and the Comprehensive Cancer Center (IKA) in Amsterdam.

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